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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,016	07/18/2005	Masanobu Sugimoto	4676-25	6554
23117 7590 02/02/2010 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
COLE, ELIZABETH M				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
02/02/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/507,016

**Applicant(s)**

SUGIMOTO ET AL.

**Examiner**

Elizabeth M. Cole

**Art Unit**

1794

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/13/09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 12-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

1. In view of the Appeal Brief filed on 5/13/09, PROSECUTION IS HEREBY REOPENED. A new rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

2. Claims 12-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed does not provide support for the limitation that the cured primary coating has a modulus of less than 3MPa as 23C. The specification may be amended to insert this limitation since

original claim 12 did include the recitation of a modulus of less than 3 MPa to overcome this rejection.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. {Uchida} (WO 01/47824 A1) in view of Shustack, U.S. Patent No. 5,533,529, with evidence from Bicerano (*Predication of Polymer Properties*) and Furukawa (*Physical Chemistry of Polymer Rheology*).

Uchida teaches a coated optical fiber comprising a primary coating and an outer or secondary coating layer, wherein the secondary coating is cured with a liquid composition comprising a urethane methacrylate, a polymerizable monomer of methacrylate-type, and initiator ({Uchida} Claim 1 | C3:L32-44). The amount of urethane methacrylate (A) is preferably 30- to 90-% ({Uchida} P8:L10-14). The amount of polymerizable monomer (B) ranges from preferably 1- to 60-%. The photoinitiator (C) ranges from 0.1- to 10-% ({Uchida} P9:L26-28). Specific compositions are reported too ({Uchida} Table 1). The urethane methacrylate is based on a polyether based polyol, a diisocyanate, and a hydroxyl group-containing meth(acrylate) ({Uchida} P3:L4-14). For polyols for synthesizing urethane (meth)acrylate, Uchida teaches polyether diols such as polypropylene glycol ({Uchida} P5:L14-19). Bisphenol

A is taught as a suitable alilcyclic polyether diol ({Uchida} P6:L13-16). Given the molecular weight of urethane meth(acrylate) and polyol precursors for synthesizing, a molecular weight of the polyol must be within the range claimed ({Uchida} P7:L28-P8:L3). Uchida teaches that temperature affects the modulus too ({Uchida} P9:L29-34).

Uchida is silent regarding the glass transition temperature and relaxation time of the compounds. The composition taught, however, is substantially similar to the claimed invention. It comprises overlapping ranges of the urethane methacrylate polyether backbone, a polymerizable monomer, photo initiator, and subsequent limiting compounds. Compositions of the same materials would exhibit a similar range of properties. Evidence of the correlation between the polymeric material and its glass transition and relaxation time are clear: 1) glass transition is affected factors including structural, chemistry, molecular weight, & morphology ({Bicerano} Pages 179 & 180); and 2) glass transition time appears to be the only non-constant or non-integer factor in a general estimation of the relaxation time of a polymer ({Furukawa} Pages 146, 149, & 150 | Eqs. 16.27 & 17.1). Since the same polymeric materials generally exhibit the same properties, the polymer compositions appear to have the same glass transition temperatures and stress relaxation times as the claimed invention.

At the time of the invention, it would have been obvious to provide optical fibers having the claimed glass transition and relaxation time for the substantially similar optical fiber liquid coating composition {Uchida An intrinsic feature need not be recognized at the time to satisfy prima facie obviousness. Motivation to optimize the composition is based on the performance through mechanical properties and surface

characteristics ({Uchida} P1:L6-9 & P8:L29-33). Thus, it would have been obvious to follow the teaching by Uchida to obtain the curable liquid resin composition.

5. Further, with regard to the glass transition temperatures claimed for the secondary coating, Shustack teaches values for the T<sub>g</sub> of about 50 degrees C which meet the claimed values, see examples as well as col. 2, lines 38-51. Therefore, since Shustack teaches that the glass transition temperature of the secondary coating should be high in order to allow the coating to function as a hard protective layer, it would have been obvious to have selected a value of about 50 degrees C as the T<sub>g</sub> of the secondary coating in Uchida, in order to form a secondary coating which was hard and protective.

With regard to the claimed modulus of the first and second coating layers, Uchida teaches a first or primary coating which is flexible. A flexible material will have a low modulus. Uchida teaches a second coating as set forth above. Uchida teaches that the second coating should be rigid. See page 1, lines 12-16. Uchida teaches that the second coating should have a modulus of greater than 50 Mpa, preferably more than 200 Mpa, particularly preferably more than 400 MPa. See page 2, lines 29-30, page 12, lines 5-19. Examples 1 and 2 show a modulus of the second coating of 520 and 460 MPa. Therefore, Uchida teaches fibers which have a low modulus first coating and a high modulus second coating. Uchida differs from the claimed invention because it does not teach that the primary coating should have a modulus of less than 3 MPa at 23C. Shustack teaches that a suitable modulus for the low modulus primary coating of an optical fiber is 2.03 MPa, (See examples which teach a modulus of 295.8 for the

modulus of the primary coating, which converts 2 .03 MPa). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the modulus of the primary coating in Uchida of less than 3 MPa, in view of the examples of Shustack which teach that in the art of optical fibers, a modulus of less than 3 MPa was considered and acceptable low modulus for the primary coating of an optical fiber which comprised both a primary and second coating.

6. Applicant's arguments with respect to claims 12-25 have been considered but are moot in view of the new ground(s) of rejection. With regard to the modulus of the primary coating, the newly applied Shustack reference is applied which teaches a modulus of less than 3 MPa for the primary coating of the optical fibers as well as the claimed glass transition temperature for the secondary coating.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth M. Cole whose telephone number is (571) 272-1475. The examiner may be reached between 6:30 AM and 6:00 PM Monday through Wednesday, and 6:30 AM and 2 PM on Thursday.

The examiner's supervisor Rena Dye may be reached at (571) 272-3186.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax number for all official faxes is (571) 273-8300.

Art Unit: 1794

/Elizabeth M. Cole/  
Primary Examiner, Art Unit 1794

e.m.c

/Rena L. Dye/  
Supervisory Patent Examiner, Art Unit 1794